

IN THE CLAIMS

Please amend the claims as follows:

1. (Previously presented) A data processing apparatus for scrambling data which are under being transferred or de-scrambling scrambled data which are under being transferred, comprising:

an ID storing section which stores an ID information relating to a sector which is a scrambling block unit of data under being transferred, which ID information is set by a central processing unit;

a sector counter section which counts the number of the sectors in the data under being transferred;

an operation section which adds the ID information from the ID storing section and the sector number information from the sector counter section;

a scramble seed value table conversion section which converts the addition result which is inputted from the operation section into a scrambling seed value;

a scramble filter of at least one byte which, making a period during which data of a predetermined length is transferred one cycle, produces a next cycle scramble seed value from the present cycle scramble seed value;

a selector which selects a scramble seed value which is outputted from the scramble seed table conversion section when the data under being transferred is a top of a sector and selects the scramble seed value which is outputted from the scramble filter section otherwise, to output the selected result to the scramble filter; wherein

the data under being transferred being scrambled or the scrambled data under being transferred being de-scrambled using the scramble seed value which is outputted from the selector.

2. (Currently Amended) The data processing apparatus as defined in Claim 1 wherein[[[:]] said scramble filter section which includes at least two scrambling filters, selects a scrambling filter in accordance with the data length of the data to be transferred, to produce a next cycle scrambling seed value from the present cycle scrambling seed value.

3. (Previously presented) A data processing apparatus for scrambling data which are under being transferred, comprising:

an ID storing section which stores an ID information relating to a sector which is a scrambling block unit of data under being transferred, which ID information is set by a central processing unit;

a sector counter section which counts the number of the sectors in the data under being transferred;

an operation section which adds the ID information from the ID storing section and the sector number information from the sector counter section;

a scramble seed value table conversion section which converts the addition result which is inputted from the operation section into a scrambling seed value;

a scramble filter which, making a period during which data of a predetermined length is transferred one cycle, produces a next cycle scramble seed value from the present cycle scramble seed value;

a jumping processing scramble filter which receives the addition result of the operation section and the address information of the data under being transferred, produces a scramble seed value at the destination using the addition result, providing with a case where a jumping in which a part of the data under being transferred is failed, to hold the same value, and outputs a scramble seed value corresponding to the data address at the destination when the jumping processing has occurred;

a first selector which selects the scramble seed value which is outputted from the jumping processing scrambling filter when the jumping processing has occurred, and selects the scramble seed value which is outputted from the scrambling filter otherwise, to output the selected result;

a second selector which selects the scramble seed value which is outputted from the scramble seed value table conversion section when the data under being transferred is a top of a sector and selects the scramble seed value which is outputted from the first selector otherwise, to output the selected result to the scramble filter; wherein

the data under being transferred being scrambled using the scramble seed value which is outputted from the second selector.

4. (Previously presented) A data processing apparatus for de-scrambling scrambled data which are under being transferred, comprising:

an ID storing section which stores an ID information relating to a sector which is a scrambling block unit of data under being transferred, which ID information is set by a central processing unit;

a sector counter section which counts the number of the sectors in the data under being transferred;

an operation section which adds the ID information from the ID storing section and the sector number information from the sector counter section;

a scramble seed value table conversion section which converts the addition result which is inputted from the operation section into a scrambling seed value;

a scramble filter which, making a period during which data of a predetermined length is transferred one cycle, produces a next cycle scramble seed value from the present cycle scramble seed value;

a jumping processing scramble filter which receives the addition result of the operation section and the address information of the data under being transferred, produces a scramble seed value at the destination using the addition result, providing with a case where a jumping in which a part of the data under being transferred is failed, to hold the same value, and outputs a scramble seed value corresponding to the data address at the destination when the jumping processing has occurred;

a first selector which selects the scrambling seed value which is outputted from the jumping processing scrambling filter when the jumping processing has occurred, and selects the scramble seed value which is outputted from the scrambling filter otherwise, to output the selected result; and

a second selector which selects the scrambling seed value which is outputted from the scramble seed value table conversion section when the data under being transferred is a top of a sector and selects the scramble seed value which is outputted from the first selector otherwise, to output the selected result to the scramble filter; wherein

the scrambled data under being transferred being de-scrambled using the scramble seed value which is outputted from the second selector.

5. (Previously presented) The data processing unit as defined in Claim 3 wherein said scramble filter unit which includes at least two scramble filters, selects a scrambling filter in accordance with the data length of the data to be transferred, to produce a next scrambling seed value from the present scramble seed value.

6. (Previously presented) The data processing device as defined in Claim 3 wherein said scramble filter section which includes at least two scramble filters, selects a scrambling filters in accordance with the jumping destination of the data to be transferred, to produce the scramble seed value.

7. (Previously presented) The data processing unit as defined in Claim 4 wherein said scramble filter unit which includes at least two scramble filters, selects a scrambling filter in accordance with the data length of the data to be transferred, to produce a next scrambling seed value from the present scramble seed value.

8. (Previously presented) The data processing device as defined in Claim 4 wherein said scramble filter section which includes at least two scramble filters, selects a scrambling filter in accordance with the jumping destination of the data to be transferred, to produce the scramble seed value.